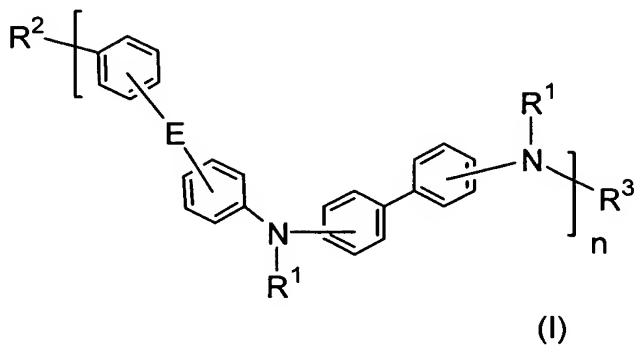


CLAIMS

What is claimed is:

1. A compound having the formula:

5



wherein:

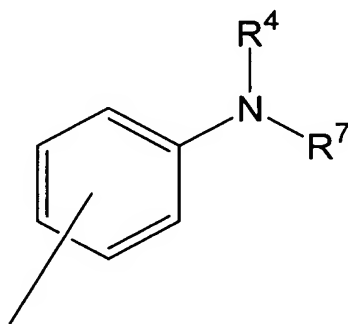
n is an integer of at least 1;

10 R^1 is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl substituted with 1 or more fluorine atoms;

R^3 is selected from H and R^1 ;

R^2 is selected from H, R^1 , alkyl, fluoroalkyl, Cl, Br, I and an arylamino group of formula (II),

15



20 wherein R^4 is selected from aryl, H, R^1 , alkyl, and fluoroalkyl;
 R^7 is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl substituted with 1 or more fluorine atoms, preferably up to 7 fluorine atoms;

5 R^5 and R^6 are each independently selected from H, F, alkyl, aryl, alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy. R^5 and R^6 can, when taken together, form a ring; R^7 is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl substituted with 1 or more
 fluorine atoms, preferably up to 7 fluorine atoms; and

10 E is selected from O, S, $(SiR^5R^6)_m$ wherein m is an integer of 1 to 20, $(CR^5R^6)_m$ wherein m is an integer of 1 to 20, and combinations thereof, wherein R^5 and R^6 are each independently selected from H, F, alkyl, aryl, alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy and
 wherein R^5 and R^6 can, when taken together, form a non-aromatic ring, provided that when E is $(CR^5R^6)_m$, and n is greater than 1 and m is 1, at least one of R^5 and R^6 is not hydrogen or a hydrocarbon.

15 2. The compound of claim 1, and wherein R^5 and R^6 , when taken together, form a non-aromatic ring.

3. The compound of claim 1 wherein n is greater than 1.

4. The compound of claim 2 wherein R^1 is different at each occurrence.

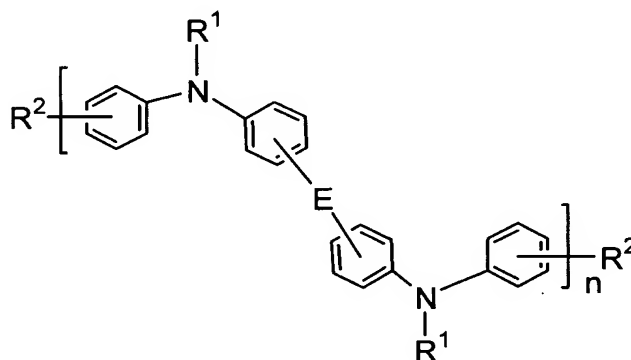
5. The compound of claim 1 wherein R^2 is H.

20 6. The composition of claim 5 wherein R^3 is aryl.

7. The compound of claim 1 wherein R^1 is selected from phenyl, 1-naphthyl, and 2-naphthyl.

8. The compound of claim 1 wherein $n = 1$, R^2 is H, and R^3 is selected from phenyl, 1-naphthyl, and 2-naphthyl.

25 9. A compound of formula (III):

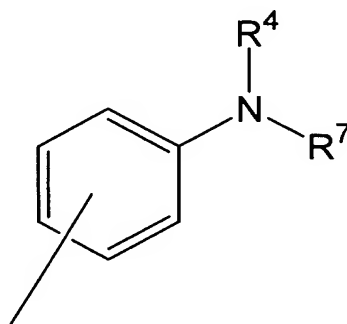


(III)

wherein

n is an integer of at least 1, R¹ is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl. preferably, R¹ is aryl and may be different at each occurrence (i.e. copolymers). R² is selected from H, R¹, alkyl, fluoroalkyl, Cl, Br, I and arylamino of formula (II)

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(II)

R⁴ is selected from aryl, H, R¹, alkyl, fluoroalkyl; and

10 E is selected from O, S, (SiR⁵R⁶)_m wherein m is an integer of 1 to 20, (CR⁵R⁶)_m wherein m is an integer of 1 to 20, and combinations thereof, and can be different at each occurrence, wherein R⁵ and R⁶ are each independently selected from H, F, alkyl, aryl, alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy and wherein R⁵ and R⁶ can,
15 when taken together, form a non-aromatic ring, provided that when E is (CR⁵R⁶)_m, and n is greater than 1 and m is 1, at least one of R⁵ and R⁶ is not hydrogen or a hydrocarbon.

10. The compound of claim 9 wherein R¹ is different at each occurrence.

20 11. The compound of claim 9, wherein R⁵ and R⁶, when taken together, form a non-aromatic ring.

12. The compound of claim 9 wherein R² is H or aryl.

13. The compound of claim 9 wherein R³ is aryl.

14. The compound of claim 9 wherein R⁴ is aryl.

25 15. The compound of claim 9 wherein R¹ is selected from phenyl, 1-naphthyl, and 2-naphthyl.

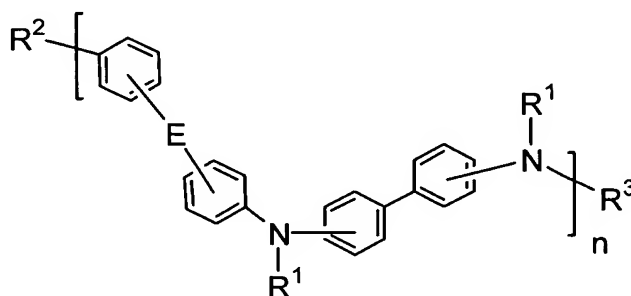
16. The compound of claim 9 wherein n = 1, R² is H, and R³ is selected from phenyl, 1-naphthyl, and 2-naphthyl.

17. The compound of claim 9 wherein at least one aromatic ring in the compound of formula (III) has a substituent selected from H, F, alkyl, aryl, alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy.

18. The compound of claim 9 wherein substituents on two neighboring aromatic rings in the compound of formula (III) together form an aromatic or non-aromatic ring.

19. The compound of claim 9 wherein adjacent substituents on at least one aromatic ring together form a fused aromatic or non-aromatic ring.

20. A composition comprising a compound of at least one compound selected from:



(I)

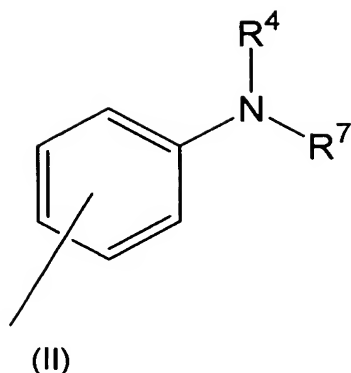
wherein:

n is an integer of at least 1;

R¹ is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl substituted with 1 or more fluorine atoms;

R³ is selected from H and R¹;

R² is selected from H, R¹, alkyl, fluoroalkyl, Cl, Br, I and an arylamino group of formula (II),



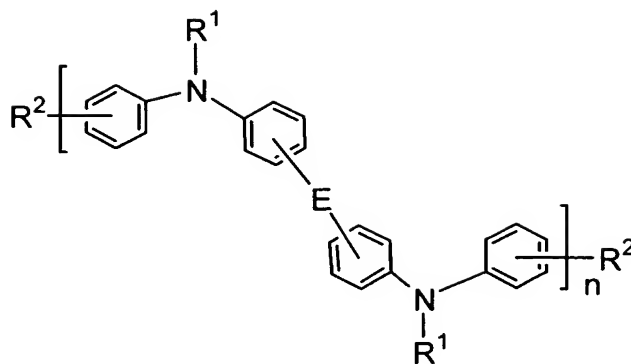
wherein R^4 is selected from aryl, H, R^1 , alkyl, and fluoroalkyl;
 R^7 is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl
 5 substituted with 1 or more fluorine atoms, preferably up to 7 fluorine
 atoms;

R^5 and R^6 are each independently selected from H, F, alkyl, aryl,
 alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy. R^5
 and R^6 can, when taken together, form a ring; R^7 is selected from aryl,
 10 heteroaryl, fluoroaryl, and fluoroheteroaryl substituted with 1 or more
 fluorine atoms, preferably up to 7 fluorine atoms; and

E is selected from O, S, $(SiR^5R^6)_m$ wherein m is an integer of 1 to
 20, $(CR^5R^6)_m$ wherein m is an integer of 1 to 20, and combinations thereof,
 wherein R^5 and R^6 are each independently selected from H, F, alkyl, aryl,
 15 alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy and
 wherein R^5 and R^6 can, when taken together, form a non-aromatic ring,
 provided that when E is $(CR^5R^6)_m$, and n is greater than 1 and m is 1, at
 least one of R^5 and R^6 is not hydrogen or a hydrocarbon.

20 and

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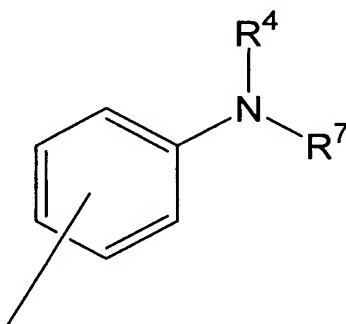


(III)

wherein

- 5 n is an integer of at least 1, R¹ is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl. preferably, R¹ is aryl and may be different at each occurrence (i.e. copolymers). R² is selected from H, R¹, alkyl, fluoroalkyl, Cl, Br, I and arylamino of formula (II)

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(II)

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R⁴ is selected from aryl, H, R¹, alkyl, fluoroalkyl; and

- 20 E is selected from O, S, (SiR⁵R⁶)_m wherein m is an integer of 1 to 20, (CR⁵R⁶)_m wherein m is an integer of 1 to 20, and combinations thereof, and can be different at each occurrence, wherein R⁵ and R⁶ are each independently selected from H, F, alkyl, aryl, alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy and wherein R⁵ and R⁶ can, when taken together, form a non-aromatic ring, provided that when E is

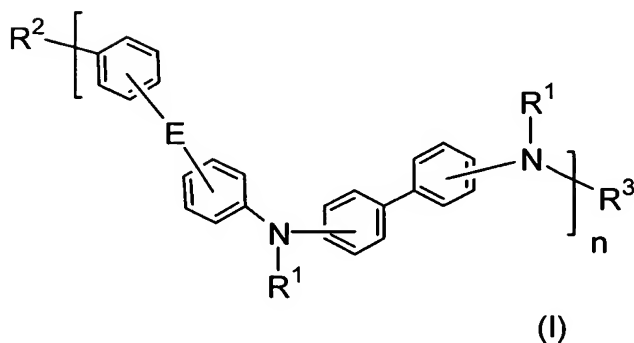
$(CR^5R^6)_m$, and n is greater than 1 and m is 1, at least one of R^5 and R^6 is not hydrogen or a hydrocarbon.

21. An electronic device comprising at least one layer comprising at least one compound selected from the compounds of Claim 1 or Claim 9.

22. The device of Claim 21, wherein the layer is a charge transport layer.

23. The device of Claim 21, wherein the layer is a light-emitting layer.

24. A process for producing a polymer, comprising:
(a) providing two or more compounds having the formulae (I) or (II):



wherein:

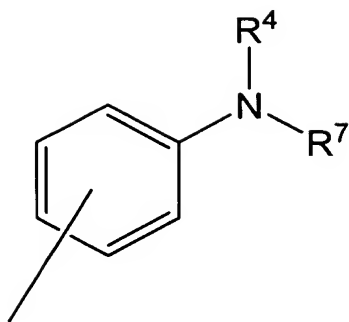
n is an integer of at least 1;

R^1 is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl substituted with 1 or more fluorine atoms;

R^3 is selected from H and R^1 ;

R^2 is selected from H, R^1 , alkyl, fluoroalkyl, Cl, Br, I and an arylamino group of formula (II),

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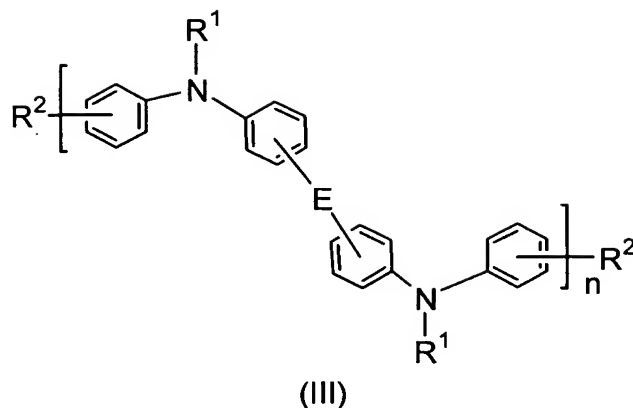
(II)

wherein R⁴ is selected from aryl, H, R¹, alkyl, and fluoroalkyl;
 R⁷ is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl
 substituted with 1 or more fluorine atoms, preferably up to 7 fluorine
 atoms;

R⁵ and R⁶ are each independently selected from H, F, alkyl, aryl,
 alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy. R⁵
 and R⁶ can, when taken together, form a ring; R⁷ is selected from aryl,
 heteroaryl, fluoroaryl, and fluoroheteroaryl substituted with 1 or more
 fluorine atoms, preferably up to 7 fluorine atoms; and

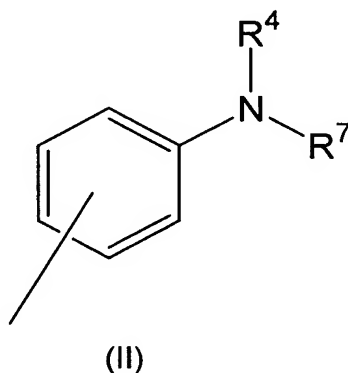
E is selected from O, S, (SiR⁵R⁶)_m wherein m is an integer of 1 to
 20, (CR⁵R⁶)_m wherein m is an integer of 1 to 20, and combinations thereof,
 wherein R⁵ and R⁶ are each independently selected from H, F, alkyl, aryl,
 alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy and
 wherein R⁵ and R⁶ can, when taken together, form a non-aromatic ring,
 provided that when E is (CR⁵R⁶)_m, and n is greater than 1 and m is 1, at
 least one of R⁵ and R⁶ is not hydrogen or a hydrocarbon

or



wherein

- n is an integer of at least 1, R¹ is selected from aryl, heteroaryl, fluoroaryl, and fluoroheteroaryl. preferably, R¹ is aryl and may be different at each occurrence (i.e. copolymers). R² is selected from H, R¹, alkyl, fluoroalkyl, Cl, Br, I and arylamino of formula (II)



R⁴ is selected from aryl, H, R¹, alkyl, fluoroalkyl; and

- E is selected from O, S, (SiR⁵R⁶)_m wherein m is an integer of 1 to 20, (CR⁵R⁶)_m wherein m is an integer of 1 to 20, and combinations thereof, and can be different at each occurrence, wherein R⁵ and R⁶ are each independently selected from H, F, alkyl, aryl, alkoxy, aryloxy, fluoroalkyl, fluoroaryl, fluoroalkoxy, and fluoroaryloxy and wherein R⁵ and R⁶ can, when taken together, form a non-aromatic ring, provided that when E is (CR⁵R⁶)_m, and n is greater than 1 and m is 1, at least one of R⁵ and R⁶ is not hydrogen or a hydrocarbon.

(b) reacting said compounds in the presence of a copper, nickel, or palladium catalyst while maintaining said compounds at a temperature of 22°C to 150°C for 24 to 92 hours, to form a first polymer;

5 (c) treating said polymer with an endcapping group to form a capped polymer; and

(d) further reacting said capped polymer for 24 to 48 hours to produce said polymer.

10 25. The device of Claim 21, wherein the device is selected from a light-emitting diode, a light-emitting diode display, a laser diode, a photodetector, photoconductive cell, photoresistor, photoswitch, phototransistor, phototube, IR-detector, photovoltaic device, solar cell, transistor or diode.